

Sector-Based Workshop

Agriculture Sector

**Richard Bode
California Air Resources Board**

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What's in the Agricultural Sector

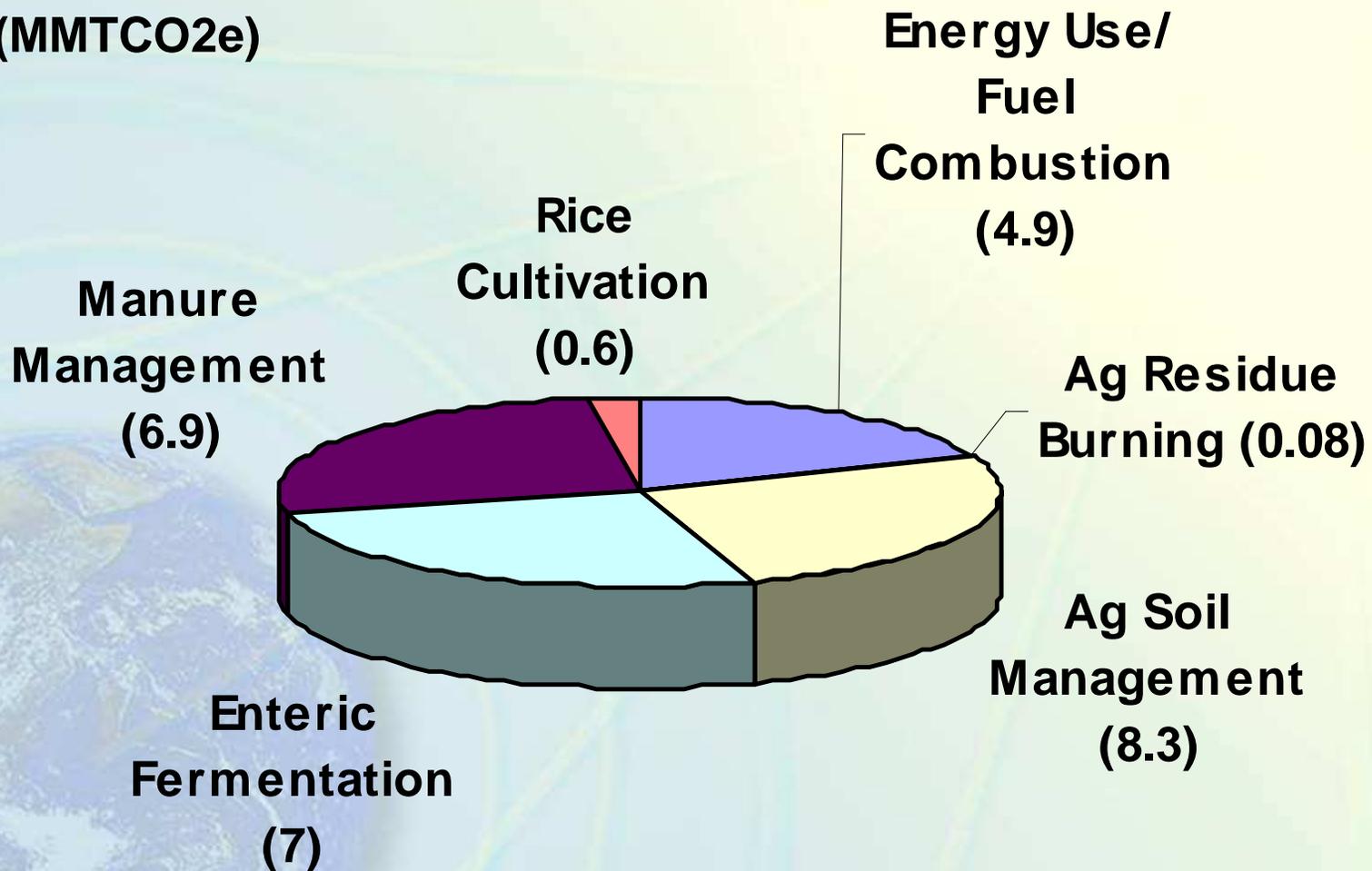


Challenges and Opportunities

- **Complex biological systems**
- **Diverse source types**
- **Life-cycle analysis complex**
- **Potential for sequestration and emission reductions**
- **Potential measures oriented toward voluntary approaches**

2004 Agricultural GHG Emissions

(MMTCO₂e)



Agricultural Emissions

- 1990 Baseline Emissions:
23 MMTCO₂E
- 2004 Baseline Emissions:
28 MMTCO₂E
- 2020 Preliminary Forecasted Emissions:
32 MMTCO₂E

Emission Forecast Issues

- **Adaptation to climate change**
- **Types of produce**
- **Efficiency**
- **Livestock management**

Potential Agriculture Strategies



- **Livestock emissions**
- **Energy (biomass/biofuels)**
- **Efficiency improvements**
- **Land use**
- **Research**

Livestock Emissions

- **Reduction of GHG emissions from livestock operations**
- **Potential Approaches**
 - **Manure Management**
 - **Enteric Fermentation**

Energy (Biomass/Biofuels)

- **Use of renewable fuels in place of fossil fuels**
- **Potential Approaches**
 - **Agricultural Waste Stream Utilization**
 - **Bio-Energy Crops**

Efficiency Improvements

- **Reduce GHG emissions through more efficient agricultural practices**
- **Potential Approaches**
 - **Crop Management**
 - **Water Management**
 - **Pump Efficiency and Electrification**
 - **Conservation Tillage**
 - **Fertilizer Use Efficiency**

Land Use

- **Promote conservation and carbon sequestration through land use approaches**
- **Potential Approaches**
 - **Agricultural Easements**
 - **Agricultural Land Retirement**
 - **Farmscape Sequestration**

Research

- **Explore improved agricultural practices and their impacts**
- **Potential Approaches**
 - **Life Cycle Analysis**
 - **Best Practice Protocols**
 - **Fertilizer N₂O Emissions (Early Action)**
 - **Solar Ponds**

Emission Reduction Approaches

- **Policy Options Include:**
 - **Direct Regulation**
 - May be feasible for some discrete aspects
 - **Market Mechanism**
 - Could become a source of offsets
 - Unlikely to be directly within a market system
 - **Incentives**
 - **Identification of Best Practices**

Scoping Plan Process

- **Climate Action Team Sub-group**
- **Interagency/Multi-stakeholder Agriculture Sector Scoping Workgroup**
- **ARB Staff Agriculture Sector Technical Team**
- **Scoping Plan Products**
- **Scoping Plan Development & Adoption**

Potential Impacts of Unmitigated Climate Change on Agriculture



- Decreased milk production
- Decrease in chill hours required for fruit and nuts
- Increased risk of water shortages
- Increasing temperatures could decrease yields
- Increased pest pressure and expanded range for many agricultural pests
- Production losses in some of California's most important crops

Contact Information

**Richard Bode, Chief
Emissions Inventory Branch
(916) 323-8413
rbode@arb.ca.gov**

**Dale Shimp, Manager
Environmental Justice and Special Projects Section
(916) 324-7156
dshimp@arb.ca.gov**

**Steve Shaffer, Director
Agricultural and Environmental Stewardship
(916) 657-4956
sshaffer@cdfa.ca.gov**